REMARKS

This amendment is responsive to the Final Office Action of March 30, 2010. Reconsideration and allowance of claims 1-15 and 17-21 are requested.

The Office Action

Claims 1-4, 8-10, 12, 13, and 15-21 stand rejected under 35 U.S.C. § 103 over Allen (US 2002/0097239) as modified by Gilligan (US 5,374,942) as further modified by Stewart ("Calculus").

Claim 5 stands rejected under 35 U.S.C. § 103 over Allen as modified by Dobbelaar (US 6,538,672) as further modified by Stewart ("Calculus").

Claim 6 stands rejected under 35 U.S.C. § 103 over Allen as modified by Gargi (US 6,915,489) as further modified by Stewart ("Calculus").

Claim 7 stands rejected under 35 U.S.C. § 103 over Allen as modified by Takabayashi (US 2003/0158476) as further modified by Stewart ("Calculus").

Claims 11 and 14 stand rejected under 35 U.S.C. § 103 over Allen as modified by Sezaki (US 6,078,313) as further modified by Stewart ("Calculus").

Summary and Background

There are a plurality of coordinate systems inherent in the present application and the prior art. In the embodiment in which the array of images is associated with three attributes, each attribute can be thought of as being associated with one of mutually orthogonal x-, y-, and z-axes as shown in Figure 3 of the present application. When scrolling along an x-axis, the subset of display images move horizontally along the display screen. When scrolling in a y- direction, the subset of images moves vertically along the display screen. When scrolling along the z-axis, images in successive ones of the other layers 5 in Figure 5 are displayed.

To scroll along the x-axis, one moves a manipulation unit or input device in an x- direction. When one wants to scroll along the y-axis, one moves the input device in a y- direction, orthogonal to the first. However, manipulation units or input devices, such as a mouse, touch screen, track ball, joy stick, or touch pad are constrained by their construction to one plane. Such devices can readily indicate

scrolling along the x- and/or y-axes, for example, by moving the input device in a corresponding x- and/or y- direction.

The difficulty arises as to how to use these two-dimensional manipulation units or input devices to cause scrolling along the orthogonal z-axis.

Allen does not disclose scrolling in three dimensions by movement of a mouse or other such input device.

Gilligan, cited by the Examiner, discloses scrolling along the z-axis by rotating the mouse in circles. This enables Gilligan to move concurrently in the x- and y-directions by scrolling diagonally.

By distinction, the present application describes moving the mouse or other input device along a diagonal between and in the plane of the x- and y-directions to scroll in the z-direction.

The Examiner asserts that it is a mere choice of design whether to move the mouse or other input device in circles or along a diagonal or imaginary z-axis to control scrolling along a z-axis versus rotate it in circles like Gilligan. For the reasons set forth below in greater detail, the applicant disagrees.

The Gilligan Reference

The Examiner admits that "Gilligan does not explicitly teach a method of scrolling the z-axis in response to moving the mouse in a diagonal direction...." To address this shortcoming of Gilligan, the Examiner relies on an attempt to take Official Notice that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the z-axis selection pattern to be that of a diagonal line". The applicant has and continues to traverse the vague assertion of that which is well-known in the art, at least because it is not in compliance with the Office's own procedures. The Office has failed to meet the obligation set forth in the MPEP § 2144.03, which expressly requires the Office to provide specific factual findings predicated on sound technical and scientific reasoning to support taking official notice. Assertions about what is allegedly known in the art, like those made on the present Office Action, cannot satisfy these requirements.

Furthermore, the Examiner relies on parent application US 5,313,229, also to Gilligan, which has not been explicitly made of record. The Examiner asserts that "Gilligan never limits themselves to the patterns which may be used to represent the selection of the scrolling axis". However, Gilligan does limit themselves to the detected scrolling movement of the input device. Gilligan discloses "means for dynamically setting a status variable according to a dominant axis of said cursor trail at said time intervals". Since a circular motion and a diagonal motion do not have a dominant axis, the Gilligan method would not be able to set a status variable and thus would not be able to set a scrolling axis in response to a diagonal movement of a manipulation unit, i.e. an input device.

The Stewart Reference

Once again, it appears that the Examiner is relying on references without explicitly making them of record. It is unclear as to which claim the Examiner presents the Stewart and/or Allen references as evidence that the "z-axis between the x- and y-axes" refers to. The Applicants assume that the evidence is presented in response to the numerous requests, under MPEP § 2144.03, to substantiate the Examiner's Official Notice. When a reference(s) is substituted for Official Notice, that reference(s) becomes part of the basis for rejection and must be cited and applied to the rejected claims. The Applicants respectfully request that the Examiner apply the Stewart reference to specific claims.

With reference to Allen (USPGPUB 2002/0097239), FIGURE 4A depicts a cube representing the three-dimensional storage location of object elements, i.e. display pixels or pixel brightness values (¶ 28), and not images in an image data set. The cube is represented in perspective Each object 21, is an image, and each object element contains a pixel value for a pixel of the image. Slices 32 and 33 are used in conjunction with FIGURE 3A. Once an image is displayed in window 43, 53, 63, 73, there is only one operative slider 43, 52, 62, 72. (¶ 27). Note that there is no slider corresponding to slider 33 of FIGURE 3A in FIGURES 3B, 3C, 3D, or 3D.

The Stewart reference illustrates three-dimensional vectors in perspective. Stewart is not related to two-dimensional motion of an input device to represent scrolling, much less scrolling along any one of three axes of an image data

set. Since the Examiner describes the Stewart reference in relation to the three-dimensional storage array of Allen, it is unclear how Stewart is related to diagonal motion of a manipulation device. It appears that Examiner is providing evidence describing the three-dimensional image data set, rather than the two-dimensional motion of the manipulation unit. The illustrated three orthogonal axes correspond to three orthogonal edges of the cube of FIGURE 4A of Allen, not to scrolling.

For the reasons stated above, Stewart does not provide factual findings predicated on sound technical and scientific reasoning to support movement of a manipulation unit along "a diagonal imaginary z-axis positioned diagonally between and in a common plane with the x-direction and the y-direction" as in Claim 1.

MPEP § 2144.03

Pursuant to MPEP § 2144.03, the Applicant again and continues to traverse the Examiner's assertion of that which is a mere matter of choice or well-known in the art and puts the Examiner to his proofs to cite a reference showing that the presently claimed movement of an input device in a direction between the x- and y-directions, particularly a diagonal, is either well-known or obvious.

Stewart is neither analogous prior art, i.e., does not pertain to the present art, nor does Stewart support the Examiner's assertion regarding the direction of movement of an input device to scroll in the z-direction.

It is submitted that the Examiner's inability to cite such a reference in response to repeated requests under MPEP is strong and persuasive evidence of non-obviousness.

The Claims Distinguish Patentably Over the References of Record

The Examiner is reminded that the failure of a reference which is not applied against any claim to claim a specific motion for a mouse in order to scroll along a z-direction does not cause the Gilligan '942 patent cited by the Examiner to disclose or teach every possible mouse movement which others might invent for designating the z-axis. Rather, Gilligan '942 only teaches that which is disclosed in Gilligan '942.

The Examiner's assertion that Gilligan '942 is a "continuation" of Gilligan '229 is not accurate. Rather, Gilligan '942 is a "continuation-in-part" of Gilligan '229. A continuation-in-part may contain a little or even no common subject matter with its parent application. Continuation-in-part status gives the applicant the earlier effective filing date for subject matter that is shown to be in fact, common to both applications.

Claim 1 calls for scrolling along a z-axis by moving the manipulation unit along an imaginary z-axis which is positioned diagonally between and in a common plane with the x- and y- directions. By contrast, Gilligan moves the mouse horizontally, vertically, or in circles to scroll along a corresponding selected axis. Gilligan teaches away from claim 1 such that the first status variable is set according to the dominant axis of the cursor trail (Claim 6; column 8, line 42; & column 11, line 42). Since a diagonal motion does not have a dominant axis, the method and system of Gilligan cannot assign a scrolling axis to a manipulation unit moving in a diagonal motion.

Allen discloses displaying pixels of a region of an object 21, where the pixels are stored as three-dimensional object elements (FIGURE 4A) in sequentially addressed storage locations. Each object element contains pixel values to determine pixel brightness for pixels of the window having positions corresponding to the indices of the object elements (¶ 28). Therefore, Allen teaches away from generating a view of the subset of images because Allen discloses displaying a single image with a subset of pixels. The system and method of Allen does not scroll through an image data set, but rather scrolls through a region of an image, i.e. an object 21, and displays pixels whose pixel values are stored in a corresponding object element.

Stewart, like Allen, shows a perspective view of a 3D object, particularly a coordinate system, but does not address moving a manipulation unit to scroll along coordinate system axes.

Accordingly, it is submitted that claim 1 and claims 2-7, 10-12, and 21 dependent therefrom distinguish patentably and unobviously over the references of record.

Claim 8 calls for a method in which the user selects an additional attribute by scrolling along a z-axis by moving a manipulation unit substantially

parallel to an imaginary z-axis, which x- direction, y- direction, and imaginary z-axis are disposed in a common plane with the imaginary z-axis disposed between the x-direction and the y- direction. By contrast, Gilligan moves the mouse horizontally, vertically, or in circles to scroll along a corresponding selected axis. Gilligan teaches away from claim 1 such that the first status variable is set according to the dominant axis of the cursor trail (Claim 6; column 8, line 42; & column 11, line 42). Since a diagonal motion does not have a dominant axis, the method and system of Gilligan cannot assign a scrolling axis to a manipulation unit moving in a diagonal motion.

Allen discloses displaying pixels of a region of an object 21, where the pixels are stored as three-dimensional object elements (FIGURE 4A) in sequentially addressed storage locations. Each object element contains pixel values to determine pixel brightness for pixels of the window having positions corresponding to the indices of the object elements (¶ 28). Therefore, Allen teaches away from generating a view of the subset of images because Allen discloses displaying a single image with a subset of pixels. The system and method of Allen does not scroll through an image data set, but rather scrolls through a region of an image, i.e. an object 21, and displays pixels whose pixel values are stored in a corresponding object element.

Stewart, like Allen, uses perspective to illustrate a 3D object in 2D.

Accordingly, it is submitted that claim 8 and claims 9, 13-15, and 17 dependent therefrom distinguish patentably over the references of record.

Claim 18 calls for scrolling the displayed subset of images along a third dimension by moving an input device in a third direction with a range of directions disposed generally diagonally relative to first and second ranges of directions. The method and system of Gilligan cannot assign a scrolling axis to a manipulation unit moving in a diagonal motion because it can only detect motion with a dominant axis, it is submitted that claim 18 and claims 19 and 20 dependent therefrom distinguish patentably and unobviously over the references of record.

Furthermore, Allen discloses displaying pixels of a region of an object 21, where the pixels are stored as three-dimensional object elements (FIGURE 4A) in sequentially addressed storage locations. Each object element contains pixel values to determine pixel brightness for pixels of the window having positions corresponding to the indices of the object elements (¶ 28). Therefore, Allen teaches

away from generating a view of the subset of images because Allen discloses displaying a single image with a subset of pixels. The system and method of Allen does not scroll through an image data set, but rather scrolls through a region of an image, i.e. an object 21, and displays pixels whose pixel values are stored in a corresponding object element.

Stewart illustrates a 2D perspective view of a 3D coordinate system but does not address manipulation unit movement or scrolling.

Accordingly, it is submitted that claim 18 distinguishes patentably over the references of record.

CONCLUSION

For the reasons set forth above, it is submitted that claims 1-15 and 17-21 distinguish patentably and unobviously over the references of record. An early allowance of all claims is requested.

Respectfully submitted,

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